Brief Report

Health & Demographic Determinants of Satisfaction with Pharmacy Services in Older Adults

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Recent studies indicate that the measurement of client/patient satisfaction with health services can provide a wealth of valuable data for health researchers (Attkisson & Greenfield,1994). Of particular importance is the potential use of such measures to identify subgroups with differential (high or low) levels of satisfaction. Armed with this information it may be possible to identify those whose needs are not well-accommodated under the present health care system. The current study sought to ascertain which, if any, health or demographic factors are associated with differential (higher or lower) levels of satisfaction with pharmacy services among older adults. A mailed questionnaire developed specifically for the present study was utilized for data collection (N=180). Results suggest reliable relationships do exist between patient satisfaction and certain health and demographic factors, as higher overall satisfaction and satisfaction with access to pharmacy services were both found to be associated with a lower number of self-reported health problems. It is suggested that physical access to pharmacy services may be compromised by disabling health problems, particularly among those living alone. Contrary to previous New Zealand research, the current study found no reliable relationship between eligibility for health subsidies and satisfaction with financial aspects of health care.

The quality of health care services has become an issue of paramount importance in contemporary health systems. As has been noted in a recent document published by the President and Fellows of the Harvard School of Public Health:

> "The health care system is changing rapidly. Increasingly, quality improvement and the need for quality measurement are at the forefront of the national health policy agenda. Fundamental changes in the structure and process of health care systems are occurring in both the public and private sectors. A major effect of the changes has been the dramatic growth of interest in quality measurement." (Harvard School of Public Health,1996).

Given the climate of rapid change currently evident in the New Zealand health arena, assessment of patient satisfaction may provide an important indication of the impact of recent changes on the quality of service delivery. An emphasis on increased quality of both policy development and service delivery to older adults was strongly recommended in the final report of the Prime Ministerial Task Force on Positive Ageing (July,1997). It specifically draws attention to a number of generic gaps in the New Zealand Governments' Social Science research activities, including a lack of "long-term research directly involving members of the population affected by policy decisions" (p. 41).

However, it is important to understand the practical significance of such research for quality management in the health sector at large. Initially, patient satisfaction surveys were conducted for marketing purposes rather than to improve the quality of health care services. However, it is now clearly established that patient satisfaction is a prerequisite for effective health care provision, as the degree of patient co-operation in following prescribed health behaviours can be significantly moderated by satisfaction with services received (Hinton & Stout, 1993). The relationship between sub-optimal delivery of health services and low satisfaction/utilization of health services has emerged as an empirical finding in recent research (Harris,

Luft, Rudy & Tierney,1995). Furthermore, this has also been linked to increased prevalence and severity of disease symptomology.

It has been demonstrated that dissatisfaction is associated with less medication compliance, resulting in negative intermediate outcomes with serious long-term consequences. For example, recent research on hypertension has established that lower satisfaction with health service provision is associated with decreased medication compliance, increased diastolic blood pressure and, over time, renal dysfunction (Harris et. al.,1995). Thus patient satisfaction is more than just an *indicator* of service quality. Its broad significance lies in the fact that it is also a *component* of care (italics added) (Press,1994).

Past research has found few consistent relations between socio-demographic characteristics and patient satisfaction levels, even for variables such as gender and age (Attkisson & Greenfield,1994; Barnett & Coyle,1998; Batchelor, Owens, Read & Bloor,1994; Turk & Meichenbaum,1991). However, recent New Zealand research has suggested that certain socio-demographic characteristics are reliably associated with differential levels of satisfaction, particularly in relation to the cost of health care.

Thus the present study sought to ascertain which, if any, health or demographic factors are associated with differential (higher or lower) levels of satisfaction with pharmacy services among older adults. Attention was given to determining the relationship between patient characteristics and overall satisfaction, and also to exploring the association between socio-demographic factors and three key dimensions of satisfaction with pharmacy services; i) interpersonal and communication skills of the pharmacist, ii) accessibility of services, and iii) financial aspects of dispensing services.

Method

The principal research design was a retrospective questionnaire survey. The sampling technique utilized was a random selection of individuals listed as retired under the occupational category in the 1996 Palmerston North electoral roll. 450 questionnaires were mailed, each containing a copy of the Pharmacy Services Satisfaction Questionnaire (PSSQ) developed by Paddison & Pachana (1998).

The PSSQ contains 20 questions regarding demographic characteristics, health status and pharmacy information. These are followed by 24 rating statements designed to assess satisfaction with three primary dimensions of pharmacy service provision : i) interpersonal and communication skills of the pharmacist, ii) accessibility of services, and iii) financial aspects of dispensing services. These were then summed to provide an overall patient satisfaction score. The rating statements contain both positively and negatively worded items; responses to each item are given on a 5-point likert scale ranging from *strongly agree* to *strongly disagree*. The final component of the questionnaire contains three open ended questions relating to service delivery. Assessment of psychometric properties suggests the PSSQ is both reliable and valid.

Assessment of psychometric properties suggests the PSSQ is both reliable and valid. Split-half reliability estimates were computed for each scale (interpersonal & communication skills: r = 0.79, accessibility: r = 0.85, financial aspects: r = 0.80, overall satisfaction: r = 0.94). Results suggest all scales utilised in the present study exhibit appropriate levels of reliability. Principal components analysis (with oblimin rotation) was utilised to assess the factor structure of the PSSQ. Three underlying dimensions emerged, each with an eigenvalue above 1.0. These factors were labelled: i) interpersonal and communication skills of the pharmacist, ii) accessibility of services, and iii) financial aspects of dispensing services. Collectively, these three factors accounted for 57% of the total variance. Items selected for each sub-scale were reflected in the items loading onto each of the thre factors, providing support for the validity of the sub-scales used.

In total, 180 valid questionnaires were returned, indicating a response rate of 40%. This is in line with expectations based on past studies of similar nature (Attkisson & Greenfield,1994). All respondents were of New Zealand European ethnicity, with a mean age of 73 years. Approximately equal frequencies of each gender were observed (male: 53%, female: 47%). In general, participants were found to be living in an urban area, with spouse or other family members. The majority (62%) were currently married, and had a least one prescription subsidy card (77%).

Table 1. Results from the linear regression of health and demographic determinants of overall patient satisfaction. (N=180)

Variables entered	Beta	Multiple r	Adjusted R^2
Age	.01	.29	.05*
Self-rated Health	1.77		
Long Collect	-.18		
Often Visit	.93		
Gender	.41		
Health Problems	-2.14 *		

* p<.05 (two-tailed), ** p<.01 (two-tailed).

Table 2. Results from the linear regression of health and demographic determinants of satisfaction with access. (N=180)

Variables entered	Beta	Multiple r	Adjusted R^2
Health Problems	-.19*	.40	.13**
Living Arrangements	-.25**		
Impairment	-.15		
Age	-.07		

* p<.05 (two-tailed), ** p<.01 (two-tailed).

Table 3. Results from the linear regression of health and demographic determinants of satisfaction with financial aspects of dispensing services. (N=180)

Variables entered	Beta	Multiple r	Adjusted R^2
Health Problems	-.12	.28	.03
Living Arrangements	-.05		
Impairment	.02		
Age	.17 *		
Subsidy Cards	-.03		
Self-rated Health	.15		

* p<.05 (two-tailed), ** p<.01 (two-tailed).

Results

The primary objective of the present research was to determine which, if any, health or demographic factors are associated with differential (higher or lower) levels of satisfaction. Multiple regression analyses were utilized to identify health and demographic factors which contributed to satisfaction/dissatisfaction with pharmacy services at the multivariate level. First, all health and demographic variables included in the present study were entered in an 'all in' linear regression with each sub-scale. From this, a second set of multiple regression analyses were conducted, including only the principal variables of interest to each individual scale.

Among variables included in the present study, health problems were found to be the only significant determinant of overall satisfaction (p<.05) (refer to Table 1). Both health problems (p<.05) and living arrangements (p<.01) were found to be significant determinants of satisfaction with access in the current study (refer to Table 2). Results from the linear regression of patient satisfaction with cost found age to be a significant determinant of satisfaction with pharmacy related costs (p<.05) (refer to Table 3). Among those included in the present study, no health or demographic factors were found to be significant determinants of patient satisfaction with interpersonal skills of the pharmacist.

Discussion

The primary objective of the current study was to determine which, if any, health or demographic factors are associated with differential (higher or lower) levels of satisfaction with pharmacy services among older adults. Past research has found there are few consistent relations between socio-demographic characteristics and patient satisfaction levels, even for variables such as gender and age (Attkisson & Greenfield,1994; Barnett & Coyle,1998; Batchelor et. al.,1994; Turk & Meichenbaum,1991). However, results of the present study suggest that reliable relationships do exist between patient satisfaction and certain health and demographic factors.

Higher *overall satisfaction* and satisfaction with *access to pharmacy services* were both found to be associated with a lower number of self-reported health problems. Thus findings of the current research indicate that ill-health may form a significant barrier to the effective utilization of pharmacy services, as physical access may be compromised by disabling health problems, particularly among those living alone. Interestingly, rural (as opposed to urban) residency was not found to be a barrier to pharmacy access in the current research.

The lack of a significant association between presence/absence of prescription subsidy cards and satisfaction with the cost of medication was also of note in the present study. Past research in New Zealand has suggested that those *without* a community services card (CSC) are less satisfied with financial aspects of health service provision and more likely to fail to uplift their medication (Gardner, Dovey, Tilyard & Gurr,1996). Interestingly, research focusing on general practitioners has suggested those *with* a community services card are most sensitive to financial barriers to health care, and liable to be dissatisfied with cost (Barnett & Coyle,1998). Such studies suggest that financial barriers may compromise access to health care, and raise the possibility that health subsidies could be inadequately targeted. Thus certain socio-economic groups may be disadvantaged under the current health system (although evidence regarding which groups are most penalized is contradictory).

However the current study found no reliable relationship between eligibility for health subsidies and satisfaction with financial aspects of health care. Although approximately half of respondents in the present study expressed dissatisfaction with the cost of prescription medication, both those with and without health subsidy cards were found to be *equally* dissatisfied. Furthermore, self-reported prescription collection was not found to be affected by medication cost or CSC status in the present study. Thus financial barriers do not appear to be exerting a negative impact on access to pharmacy services in the current study. These findings differ from previous research which suggests certain socio-demographic factors are associated with lower satisfaction, and increased financial barriers to health care (Barnett & Coyle,1998; Gardner et. al.,1996). However given the exploratory nature of the present study, it is suggested that additional research is undertaken to delineate in further detail the relationship between health care subsidy cards and patient satisfaction/behavioural outcomes.

In the present study, a positive association was observed between age and satisfaction with financial aspects of pharmacy services. This concurs with the findings of past research, which indicate older persons are more liable to be satisfied with health care provision, in comparison with younger individuals (McCann & Weinman,1996).

Among those included in the present study, no health or demographic factors were found to be significant determinants of patient satisfaction with *interpersonal skills* of the pharmacist. Interestingly, past research has found evidence of a strong positive association between patient satisfaction and length/regularity of contact between patient and health professional (Attkisson & Greenfield,1994; Kenny,1995). However these findings were not supported in the present study, as no association

was observed between patient satisfaction and either regularity of visits, or length of association with the pharmacy.

Meaningful analysis of patient satisfaction surveys requires an adequate understanding of the limitations of such research. It is essential to recognize that service quality is only one factor determining patient satisfaction with health care (Batchelor et. al.,1994; Morgan & Watkins,1988). Results of the present study indicate that health status is of paramount importance in determining satisfaction with pharmacy services among older adults. Thus blind acceptance of perceived quality of care as the chief determinant of patient satisfaction could be misleading, as factors other than service quality (e.g. health status) may influence patient satisfaction. This must be taken into account when explaining research findings, to ensure that the relationship between service quality and satisfaction is not over-simplified.

Conclusion

Results of the present study suggest that reliable relationships do exist between patient satisfaction and certain health and demographic factors, as higher overall satisfaction and satisfaction with access to pharmacy services were both found to be associated with a lower number of self-reported health problems. It is suggested that physical access to pharmacy services may be compromised by disabling health problems, particularly among those living alone. Contrary to previous New Zealand research, the current study found no reliable relationship between eligibility for health subsidies, and satisfaction with financial aspects of health care. Although considerable dissatisfaction with the cost of prescription medication was evident, both those with and without health subsidy cards were found to be equally dissatisfied.

Due to the exploratory nature and inherent limitations of the present study, further research is suggested to clarify the relationship between health care subsidy cards and patient satisfaction. Assessment of patient satisfaction among additional populations, particularly Maori, is also highly recommended. Given the continual changes to prescription cost, it is important that research is employed to monitor the impact of future changes on financial access to pharmacy services. Particular attention should be paid to ensuring that changes in health policy, such as increased prescription charges, do not in fact lead to greater health costs (such as increased use of hospital services due to decreased medication compliance). The utilization of a longitudinal, prospective design is also suggested to delineate the relationship between patient satisfaction, behavioural outcomes (such as medication compliance) and health status.

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